



## Director's Rule 7-2002

<b>Applicant:</b>  City of Seattle Department of Design, Construction and Land Use	<b>Page</b>  1 of 2	<b>Supersedes:</b>  N/A
	<b>Publication:</b>  7/25/02	<b>Effective:</b>  9/18/02
<b>Subject:</b>  Alterations to Water-Source Heat Pump Systems in Existing Buildings	<b>Code and Section Reference:</b>  2002 Seattle Energy Code, Section 1132	
	<b>Type of Rule:</b>  Code Interpretation	
	<b>Ordinance Authority:</b>  SMC 3.06.040	
<b>Index:</b>  Energy Code Technical & Procedural Requirements	<b>Approved</b>  (signature on file) Diane M. Sugimura, Acting Director	<b>Date</b>  9/13/02

### Purpose and Background

The purpose of this Director's Rule is to provide guidance regarding the types of existing building constraints that may make full compliance with the 2002 Seattle Energy Code Section 1132.2.2 impractical or economically burdensome for alterations to water-source heat pump systems.

When individual water source heat pumps are replaced on an existing water source heat pump system, the 2002 Seattle Energy Code Section 1132.2.2 requires the replacement water source heat pump to be equipped with water-side economizer capability. The theory behind this requirement is that a building's mechanical system can be upgraded to use the water-side economizer feature that has been built into the system over time, rather than requiring a building owner to install such a system in one expensive step.

An exception to this requirement states that “the code official may approve alternative designs not in full compliance with the Energy Code when (a) existing building or occupancy constraints make compliance impractical or (b) where full compliance would place an unreasonable economic burden on the project.” The exception is purposefully ambiguous because it is not possible to identify all conditions which might render full compliance impractical or place an unreasonable economic burden on the project at hand.

A series of meetings with representatives of building owners and operators and mechanical engineers revealed examples of existing building constraints that limit or prevent an applicant from installing fully code compliant water source heat pump equipment. Thus, this Director's Rule is intended to represent the collective wisdom and experience of building owners, operators and engineers and is not intended to set forth an exclusive list of potential obstacles in existing buildings that make full compliance with the Energy Code impractical or economically burdensome.

### **Rule**

Applicants invoking the impracticality or economically burdensome exception to Section 1132.2.2 must provide justification for using the exception. In addition, applicants must propose to use water-source heat pump units meeting the minimum efficiency ratings set forth in Chapter 14 of the 2002 Seattle Energy Code in lieu of fully code compliant units with economizer capability.

### **Guidance**

Following are examples of changes to existing systems that may render a project impractical or economically burdensome:

- a. changing building structural elements, e.g., moving beams, joists, etc., to accommodate code required clearances, size of equipment, etc.;
- b. relocation of electrical conduit 1 inch or larger carrying 3-phase power;
- c. relocation of cable tray or rectangular wireway;
- d. relocation of gravity drainage pipes of any size;
- e. relocation of refrigeration piping of any size serving equipment not within the scope of the project permit application;
- f. relocation of HVAC or domestic water piping 2 inches or larger;
- g. relocation of fire sprinkler piping 2 inches or larger;
- h. relocation of low-pressure (1/2 – 2 inches water column) HVAC ductwork having a cross-sectional area of 144 square inches or larger, not including flex duct installations of any size;
- i. relocation of medium to high pressure (greater than 2 inches water column) HVAC ductwork of any size.

It is important to note that the examples above pertain only to changes to existing systems serving equipment not within the scope of the project permit application. DCLU will review applications seeking to use the impracticality or economically burdensome exception on a case-by-case basis. In general, DCLU will approve modifications that are the least necessary to accommodate the existing conditions.

For more information:

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